

Thursday, June 25, 2015 12:34:59 PM

134042

Page 1

Accept

N900040100

Setup Start *NS1*

Revision ID:

Item Name: Full-Length Wearplate

Stop *NS2*

Start Date: 6/25/2015 **Start Qty:** 12.00

12

Cust Item ID:

Required Date: 6/25/2015 **Req'd Qty:** 12.00

12

Customer:

Reference:

Approvals: Process Plan: W15 Date: JUN 25 2015 Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D3319	C

100

0.00

100

FLOW WATER JET

0.04

Waterjet

Memo

FLOW CNC Waterjet

1-Cut as per Dwg D3319

Dwg Rev: C

Prog Rev: C

2-Deburr if necessary

110

QC2- Inspect parts off machine FAI/FAIB

0.00

110

QC

Memo

0.00

Quality Control

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

Thursday, June 25, 2015 12:34:59 PM

134042

Page 2

N900040100

Setup Start *NS1*

Stop *NS2*

12

12

Reference:

Run Start *NR1*

Stop *NR2*

**Insp.
Stamp**

120

9

DAS
38
~~2-89~~

JUN 26 2015

140

DAS
30
9-89

Form using DT8326 & DT8261 as per Dwg D3319Rev: C

DAS 30 9

JUN 30 2015

150

9

Quality Control

DAS
38
9-89

JUL 02 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																								
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DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
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Root Cause		FAULT CATEGORY							
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Misidentified ☐	Past Due ☐								

Work Order ID 134042

Thursday, June 25, 2015 12:34:59 PM

134042

Page 4

Item ID: D3319-3 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Full-Length Wearplate
Start Date: 6/25/2015 Start Qty: 12.00 ***12*** Cust Item ID:
Required Date: 6/25/2015 Req'd Qty: 12.00 ***12*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190 *190* Powdercoat Powder Coating	Grey Sandtex(Ref:4.3.5.6) per QSI005 4.3 <i>M. 130746.</i> Memo START TIME: <i>9:30</i> OVEN TEMPERATURE: <i>320°</i> FINISH TIME: <i>10:00.</i>	0.00 0.00				<i>9</i>	<i>0</i>	<i>15-9-24.</i>	<i>34 9:30</i>
200 *200* QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00				<i>(9)</i>			<i>DAS 38 9:30</i> SEP 24 2015
210 *210* Packaging Packaging	Packaging Memo Identify on inside surface using a permanent fine point marker with the following:TCCA-PDA, Dart Aerospace Ltd.P/N: D3319-3, B/N: <i>C2</i> SEP 24 2015 BXXXXXFor Product Eligibility see PDA05-18 and Stock Location: _____	0.00 0.00		<i>51 603</i>		<i>9</i>	<i>27</i>		<i>SEP 30 2015</i>

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
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OTHER : ☐					

Thursday, June 25, 2015 12:34:59 PM

134042

Page 5

Accept

N900040100

Setup Start *NS1*

Revision ID:

Item Name: Full-Length Wearplate

Stop *NS2*

Start Date: 6/25/2015 **Start Qty:** 12.00

12

Cust Item ID:**Required Date:** 6/25/2015 **Req'd Qty:** 12.00

12

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/
Work Center ID

Operation Description

Set Up/ Run Hours

Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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220

QC21- Final Inspection - Work Order Release

0.00

220

OC

Memo

0.02

Quality Control

ML3

OCT 01 2015

MLS OCT 01 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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OTHER : ☐																																																																									

Picklist Print

Thursday, June 25, 2015 12:35:03 PM

Page 1

Work Order ID: 134042

134042

Parent Item: D3319-3

D3319-3

Parent Item Name: Full-Length Wearplate

Start Date: 6/25/2015

Required Date: 6/25/2015

Start Qty: 12.00

Required Qty: 12.00

Comments:

IPP: A05.05.12New issueKJ/JLM

IPP Rev:B Now on Waterjet 06-10-03 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

M1010S18GA

Purchased

No

100

sf

107.0212

3.2524

~~42~~

M1010S18GA

32

Jm15-6-25

1010/1025 SHEET.048

Location

Loc Qty

Loc Code

MAT019

107.021152

124428

3

m130454

0.3542

m131353

103.667

131353

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
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Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER : _____							

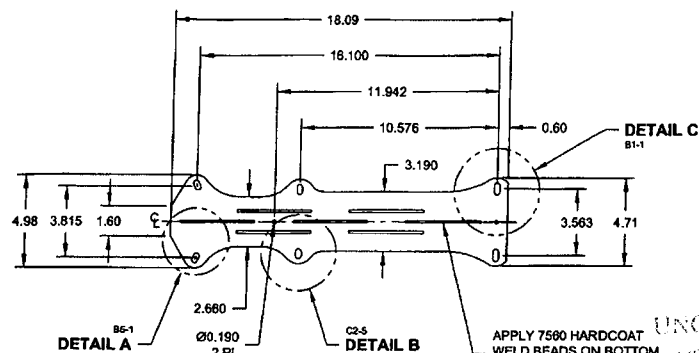
DART AEROSPACE LTD		Work Order: 134042
Description: Wearplate		Part Number: D3319-3
Inspection Dwg: D3319	Rev: C	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

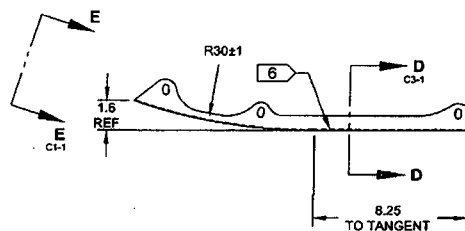
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.190	+0.005/-0.001	0.191"	-		✓	Jkma
Ø0.500	+0.006/-0.001	0.502"	-		✓	
0.316	+/-0.010	0.318"	-		✓	
0.607	+/-0.010	0.609"	-		✓	
2.94	+/-0.030	2.94"	-		✓	
2.69	+/-0.030	2.69"	-		✓	
3.527	+/-0.010	3.527"	-		✓	
4.52	+/-0.030	4.52"	-		✓	
5.063	+/-0.010	5.063"	-		✓	
6.16	+/-0.030	6.16"	-		✓	
0.60	+/-0.030	0.605"	-		✓	
8.690	+/-0.010	8.690"	-		✓	
30.790	+/-0.010	30.790"	-		T	
52.88	+/-0.030	52.88"	-		T	
62.770	+/-0.010	62.770"	-		T	
74.420	+/-0.010	74.420"	-		T	
75.52	+/-0.030	75.52"	-		T	
0.050	+/-0.010	0.047"	-		✓	

Measured by: Jm	Audited by: DAS 38	Preliminary Approval:
Date: 15-6-25	Date: JUN 26 2015	Date:

Rev	Date	Change	Revised by	Approved
A	07.07.18	New Issue	KJ/JLM	
B	12.05.15	Dimensions updated per Dwg Rev C	KJ	



D3319-1F FLAT PATTERN

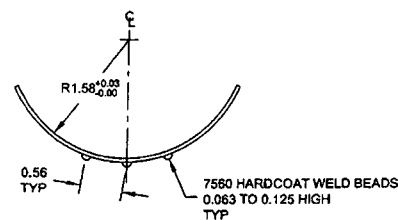


D3319-1 BENDING DETAIL
MAKE FROM D3319-1F

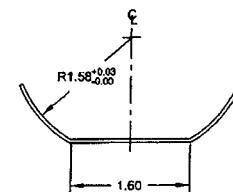
APPLY 7500 HARDCOAT
WELD BEADS ON BOTTOM
SURFACE AFTER FORMING
SEE SECTION D-D
A8-5

STANDARD
RETURN TO
UNCONTROLLED COPY
SUBJECT TO CUSTOMER
WORK ORDER

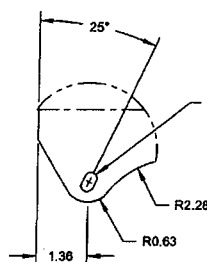
1.34092 MJS



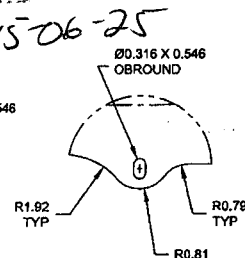
SECTION D-D
SCALE 4X
B6-1



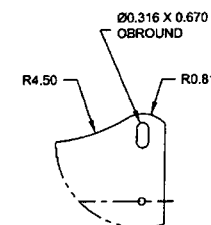
SECTION E-E
SCALE 4X
B8-1



DETAIL A
SCALE 4X
C8-1



DETAIL B
SCALE 4X
C8-1



DETAIL C
SCALE 4X
C8-1

D3319-1 WEARPLATE

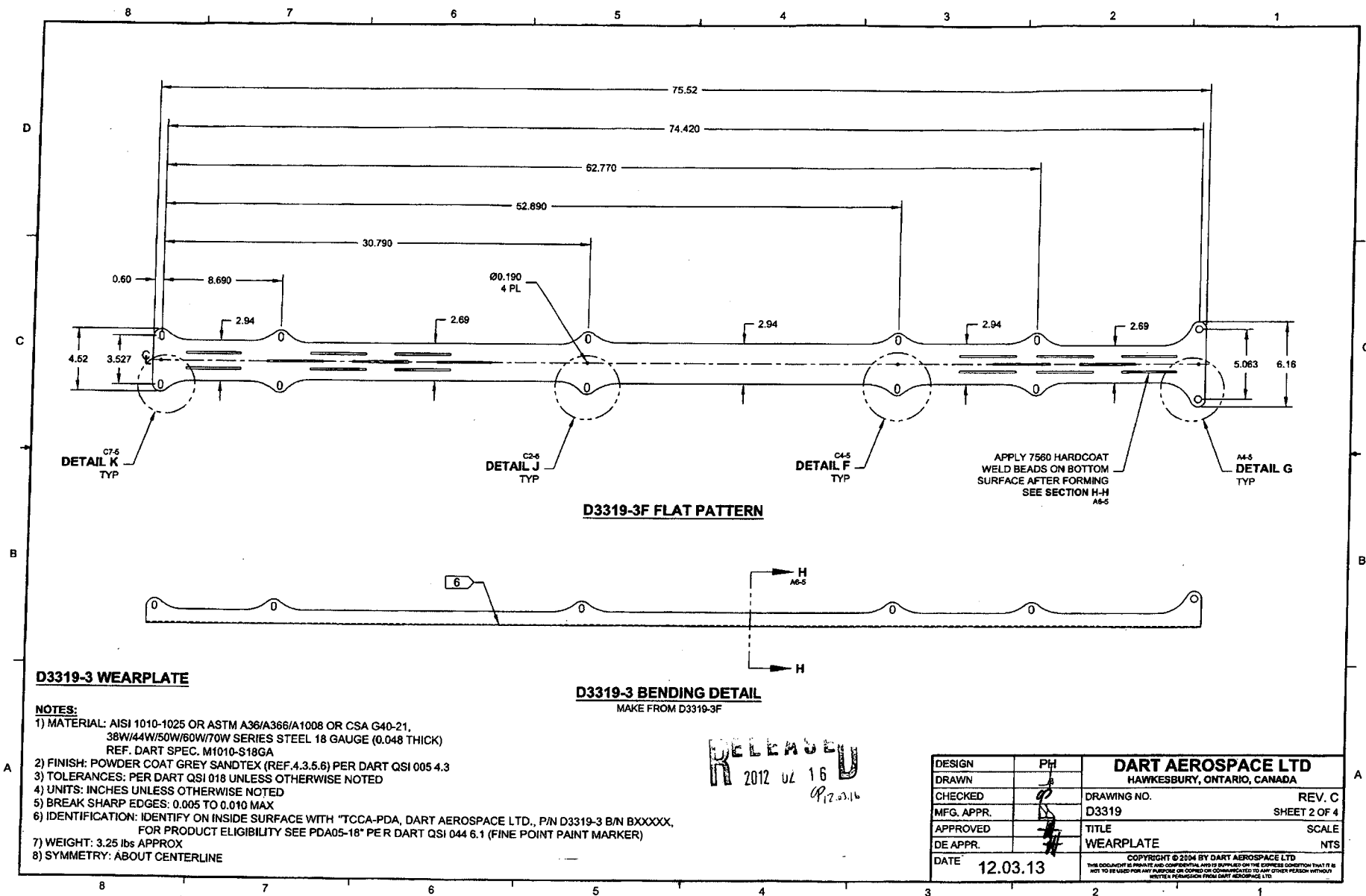
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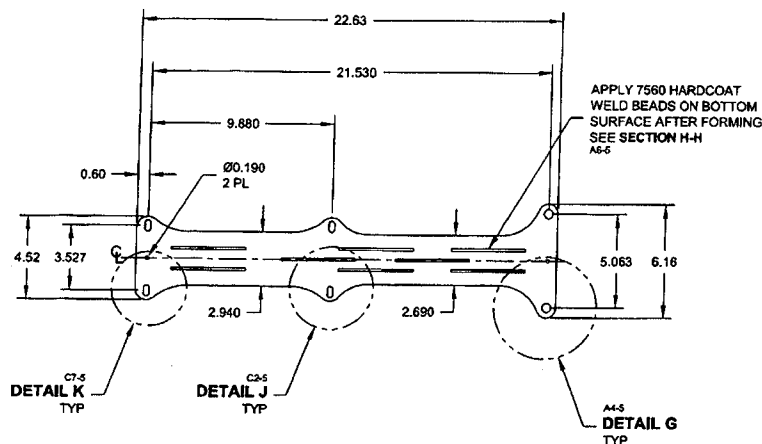
- 1) MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A1008 OR CSA G40-21, 38W/44W/50W/60W/70W SERIES STEEL 18 GAUGE (0.048 THICK) REF. DART SPEC. M1010-S18GA
- 2) FINISH: POWDER COAT GREY SANDEX (REF.4.3.5.6) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY ON INSIDE SURFACE WITH "TCCA-PDA, DART AEROSPACE LTD., P/N D3319-1 B/N BXXXXX, FOR PRODUCT ELIGIBILITY SEE PDA05-18" PER DART QSI 044 6.1 (FINE POINT PAINT MARKER)
- 7) WEIGHT: 0.90 lbs APPROX
- 8) SYMMETRY: ABOUT CENTERLINE

RELEASED
2012-03-16

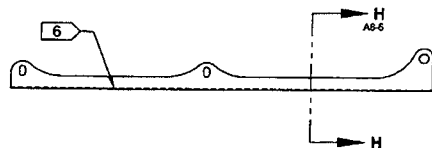
PER ECN 12-546 12.03.16

C	UPDATE TO CURRENT STANDARDS IAW QSI 043; CLOSED AFT MOST HOLE ON -3/5-7 (REF DETAIL G); SEE NCR12-547.	MB	12.03.13
B	WIDEN HOLES, REDUCE WIDTH ON -3/5-7	PH	05.06.06
A	NEW ISSUE	PH	04.09.24
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. REV. C D3319 SHEET 1 OF 4 TITLE SCALE WEARPLATE NTS COPYRIGHT © 2004 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	12.03.13		

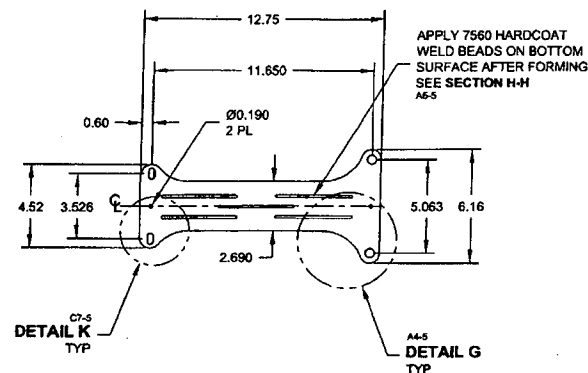




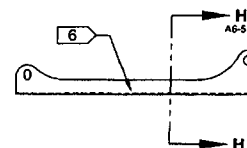
D3319-5F FLAT PATTERN



D3319-5 BENDING DETAIL
MAKE FROM D3319-5F



D3319-7F FLAT PATTERN



D3319-7 BENDING DETAIL
MAKE FROM D3319-7F

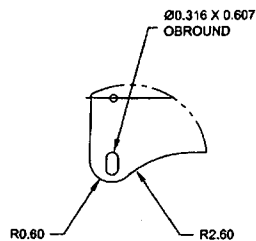
D3319-5-7 WEARPLATE

NOTES:

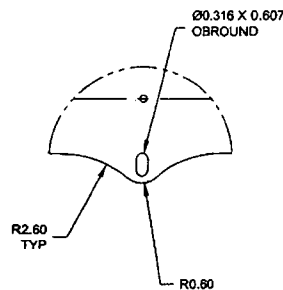
- 1) MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A1008 OR CSA G40-21, 38W/44W/50W/60W/70W SERIES STEEL 18 GAUGE (0.048 THICK) REF. DART SPEC. M1010-S18GA
- 2) FINISH: POWDER COAT GREY SANDETEX (REF.4.3.5.6) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY ON INSIDE SURFACE WITH "TCCA-PDA, DART AEROSPACE LTD., P/N D3319-X B/N BXXXXX, FOR PRODUCT ELIGIBILITY SEE PDA05-18" PER DART QSI 046 6.1 (PERMANENT MARKER)
- 7) WEIGHT: D3319-5 = 1.05 lbs APPROX; D3319-7 = 0.60 lbs APPROX
- 8) SYMMETRY: ABOUT CENTERLINE

RELEASED
2012-02-16
CP20316

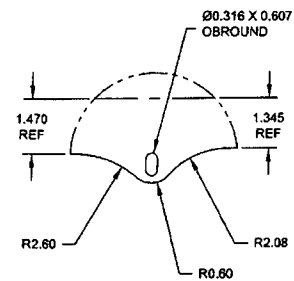
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DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. C
MFG. APPR.	<i>[Signature]</i>	D3319	SHEET 3 OF 4
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	WEARPLATE	NTS
DATE	12.03.13	COPYRIGHT © 2004 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



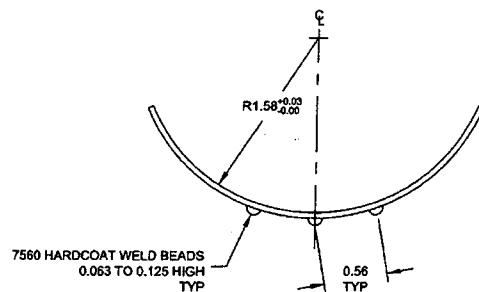
DETAIL K
SCALE 2X
B8-2
C4-3
C8-3



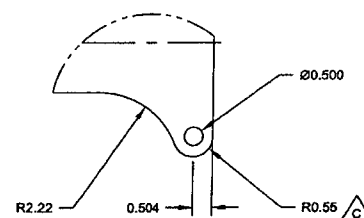
DETAIL F
SCALE 2X
B8-2



DETAIL J
SCALE 2X
B8-2
C7-3



SECTION H-H
SCALE 4X
B4-2
B3-3
B6-3



DETAIL G
SCALE 2X
B8-2
C2-3
C8-3
C

RELEASED
2012-02-16
412.03.16

DESIGN	PH	DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. C
MFG. APPR.		D3319	SHEET 4 OF 4
APPROVED		TITLE	SCALE
DE APPR.		WEARPLATE	NTS
DATE	12.03.13	COPYRIGHT © 2004 BY DART AEROSPACE LTD	
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